

EN BLOC AMENDMENTS TO H.R. 610
OFFERED BY MRS. BIGGERT OF ILLINOIS

Page 8, line 17, strike “and nuclear physics” and insert “, nuclear physics”.

Page 8, line 19, strike “and computing” and insert “computing”.

Page 9, line 9, insert “in Federal funds” after “\$1,100,000,000”.

Page 11, line 6, strike “109” and insert “110”.

Page 20, line 11, strike “full-time student” and insert “full-time graduate student”.

Page 25, after line 25, insert the following new section:

1 SEC. 109. SCIENCE AND ENGINEERING PILOT PROGRAM.

2 (a) ESTABLISHMENT OF CONSORTIUM.—Notwith-
3 standing section 203, the Secretary shall award a grant
4 to Oak Ridge Associated Universities to establish a univer-
5 sity consortium to carry out a regional pilot program for
6 enhancing scientific, technological, engineering, and math-
7 ematical literacy, creativity, and decisionmaking. The con-
8 sortium shall include leading research universities, one or

1 more universities that train substantial numbers of ele-
2 mentary and secondary school teachers, and, where appro-
3 priate, National Laboratories.

4 (b) PROGRAM ELEMENTS.—The program shall
5 include—

6 (1) expanding strategic, formal partnerships
7 among universities with strength in research, univer-
8 sities that train substantial numbers of elementary
9 and secondary school teachers, and the private sec-
10 tor;

11 (2) combining Department expertise with one or
12 more National Aeronautics and Space Administra-
13 tion Educator Resource Centers;

14 (3) developing programs to permit current and
15 future teachers to participate in ongoing research
16 projects at National Laboratories and research uni-
17 versities and to adapt lessons learned to the class-
18 room;

19 (4) designing and implementing course work;

20 (5) designing and implementing a strategy for
21 measuring and assessing progress under the pro-
22 gram; and

23 (6) developing models for transferring knowl-
24 edge gained under the pilot program to other insti-
25 tutions and areas of the country.

1 (c) REPORT.—Not later than 2 years after appropria-
2 tions are first available for the program, the Secretary
3 shall transmit to Congress a report outlining lessons
4 learned and containing a plan for expanding the program
5 nationwide. The Secretary may begin implementation of
6 such plan for expansion of the program on October 1,
7 2008. The expansion of the program shall be subject to
8 section 203.

Page 26, line 1, redesignate section 109 as section
110.

Page 27, after line 3, insert the following new para-
graph:

9 (6) PILOT PROGRAM.—For activities under sec-
10 tion 109, \$4,000,000.

Page 27, after line 18, insert the following new
paragraph:

11 (6) PILOT PROGRAM.—For activities under sec-
12 tion 109, \$4,000,000.

Page 28, after line 8, insert the following new para-
graph:

13 (6) PILOT PROGRAM.—For activities under sec-
14 tion 109, \$4,000,000.

Page 28, after line 23, insert the following new
paragraph:

1 (6) PILOT PROGRAM.—For activities under sec-
2 tion 109, \$8,000,000.

Page 29, after line 15, insert the following new paragraph:

3 (6) PILOT PROGRAM.—For activities under sec-
4 tion 109, \$8,000,000.

Page 35, line 1, strike “Secretary” and insert “Director of the Office of Science”.

Page 35, line 3, strike “Secretary” and insert “Director of the Office of Science”.

Page 35, line 7, strike “Secretary” and insert “Director of the Office of Science”.

Page 35, line 12, strike “Secretary” and insert “Director of the Office of Science”.

Page 35, line 20, strike “at least one third” and insert “, to the extent practicable, members”.

Page 38, lines 13 and 14, strike “designate any new or existing facility as a user facility” and insert “allow any Department facility to begin functioning as a user facility after the date of enactment of this Act”.

Page 46, lines 1 and 2, strike “, including the Next Generation Lighting Initiative described in subsection (b)”.

Page 46, lines 11 through 24, strike subsection (b).

Page 47, line 1, redesignate subsection (c) as subsection (b).

Page 50, after line 3, insert the following new subsection:

1 (d) STANDARDIZATION REPORT AND PROGRAM.—

2 (1) REPORT.—The Secretary shall enter into an
3 arrangement with the National Institute of Building
4 Sciences to—

5 (A) conduct a comprehensive assessment of
6 how well current voluntary consensus standards
7 related to buildings match state-of-the-art
8 knowledge on the design, construction, oper-
9 ation, repair, and renovation of high-perform-
10 ance buildings; and

11 (B) recommend steps for the Secretary to
12 take to accelerate the development and promul-
13 gation of voluntary consensus standards for
14 high-performance buildings that would address
15 all major high-performance building attributes,
16 including energy efficiency, sustainability, safe-
17 ty and security, life-cycle cost, and productivity.

18 (2) PROGRAM.—After receiving the report
19 under paragraph (1), the Secretary shall establish a

1 program of technical assistance and grants to sup-
2 port standards development organizations in—

3 (A) the revision of existing standards, to
4 reflect current knowledge of high-performance
5 buildings; and

6 (B) the development and promulgation of
7 new standards in areas important to high-per-
8 formance buildings where there is no existing
9 standard or where an existing standard cannot
10 easily be modified.

Page 51, line 1, through page 52, line 20, strike
subsection (c).

Page 59, after line 22, insert the following new sec-
tion:

11 **SEC. 307. NEXT GENERATION LIGHTING INITIATIVE.**

12 (a) IN GENERAL.—The Secretary shall carry out a
13 Next Generation Lighting Initiative in accordance with
14 this section to support research, development, demonstra-
15 tion, and commercial application activities related to ad-
16 vanced solid-state lighting technologies based on white
17 light emitting diodes.

18 (b) OBJECTIVES.—The objectives of the initiative
19 shall be to develop advanced solid-state organic and inor-
20 ganic lighting technologies based on white light emitting
21 diodes that, compared to incandescent and fluorescent

1 lighting technologies, are longer lasting; more energy-effi-
2 cient; and cost-competitive, and have less environmental
3 impact.

4 (c) INDUSTRY ALLIANCE.—The Secretary shall, not
5 later than 3 months after the date of enactment of this
6 section, competitively select an Industry Alliance to rep-
7 resent participants that are private, for-profit firms which,
8 as a group, are broadly representative of United States
9 solid state lighting research, development, infrastructure,
10 and manufacturing expertise as a whole.

11 (d) RESEARCH.—

12 (1) IN GENERAL.—The Secretary shall carry
13 out the research activities of the Next Generation
14 Lighting Initiative through competitively awarded
15 grants to researchers, including Industry Alliance
16 participants, National Laboratories, and institutions
17 of higher education.

18 (2) ASSISTANCE FROM THE INDUSTRY ALLI-
19 ANCE.—The Secretary shall annually solicit from the
20 Industry Alliance—

21 (A) comments to identify solid-state light-
22 ing technology needs;

23 (B) assessment of the progress of the Ini-
24 tiative's research activities; and

1 (C) assistance in annually updating solid-
2 state lighting technology roadmaps.

3 (3) AVAILABILITY OF INFORMATION AND ROAD-
4 MAPS.—The information and roadmaps under para-
5 graph (2) shall be available to the public and public
6 response shall be solicited by the Secretary.

7 (e) DEVELOPMENT, DEMONSTRATION, AND COMMER-
8 CIAL APPLICATION.—The Secretary shall carry out a de-
9 velopment, demonstration, and commercial application
10 program for the Next Generation Lighting Initiative
11 through competitively selected awards. The Secretary may
12 give preference to participants of the Industry Alliance se-
13 lected pursuant to subsection (c).

14 (f) INTELLECTUAL PROPERTY.—The Secretary may
15 require, in accordance with the authorities provided in sec-
16 tion 202(a)(ii) of title 35, United States Code, section 152
17 of the Atomic Energy Act of 1954 (42 U.S.C. 2182), and
18 section 9 of the Federal Nonnuclear Energy Research and
19 Development Act of 1974 (42 U.S.C. 5908), that—

20 (1) for any new invention resulting from activi-
21 ties under subsection (d)—

22 (A) the Industry Alliance members that
23 are active participants in research, development,
24 and demonstration activities related to the ad-
25 vanced solid-state lighting technologies that are

1 the subject of this section shall be granted first
2 option to negotiate with the invention owner
3 nonexclusive licenses and royalties for uses of
4 the invention related to solid-state lighting on
5 terms that are reasonable under the cir-
6 cumstances; and

7 (B)(i) for 1 year after a United States pat-
8 ent is issued for the invention, the patent hold-
9 er shall not negotiate any license or royalty
10 with any entity that is not a participant in the
11 Industry Alliance described in subparagraph
12 (A); and

13 (ii) during the year described in clause (i),
14 the invention owner shall negotiate nonexclusive
15 licenses and royalties in good faith with any in-
16 terested participant in the Industry Alliance de-
17 scribed in subparagraph (A); and

18 (2) such other terms as the Secretary deter-
19 mines are required to promote accelerated commer-
20 cialization of inventions made under the Initiative.

21 (g) NATIONAL ACADEMY REVIEW.—The Secretary
22 shall enter into an arrangement with the National Acad-
23 emy of Sciences to conduct periodic reviews of the Next
24 Generation Lighting Initiative. The Academy shall review
25 the research priorities, technical milestones, and plans for

1 technology transfer and progress towards achieving them.
2 The Secretary shall consider the results of such reviews
3 in evaluating the information obtained under subsection
4 (d)(2).

5 (h) DEFINITIONS.—As used in this section:

6 (1) ADVANCED SOLID-STATE LIGHTING.—The
7 term “advanced solid-state lighting” means a
8 semiconducting device package and delivery system
9 that produces white light using externally applied
10 voltage.

11 (2) RESEARCH.—The term “research” includes
12 research on the technologies, materials, and manu-
13 facturing processes required for white light emitting
14 diodes.

15 (3) INDUSTRY ALLIANCE.—The term “Industry
16 Alliance” means an entity selected by the Secretary
17 under subsection (c).

18 (4) WHITE LIGHT EMITTING DIODE.—The term
19 “white light emitting diode” means a
20 semiconducting package, utilizing either organic or
21 inorganic materials, that produces white light using
22 externally applied voltage.

Page 60, strike lines 1 through 4 and insert the fol-
lowing:

1 **SEC. 308. DEFINITIONS.**

2 For the purposes of this subtitle—

3 (1) the term “cost-effective” means resulting in
4 a simple payback of costs in 10 years or less; and

5 (2) the term “whole-buildings approach” in-
6 cludes, on a life-cycle basis, the energy use, cost of
7 operations, and ease of repair or upgrade of a build-
8 ing.

Page 60, line 5, redesignate section 308 as section
309.

Page 60, lines 6 through 9, strike “In addition to
the sums authorized in the Steel and Aluminum Energy
Conservation and Technology Competitiveness Act of
1988, as amended in section 304 of this Act, the” and
insert “The”.

Page 60, line 19, strike “303(c)” and insert
“303(b)”.

Page 61, line 3, strike “and”.

Page 61, line 6, strike the period and insert “; and”.

Page 61, after line 6, insert the following new sub-
paragraph:

1 (G) \$20,000,000 for carrying out the Next
2 Generation Lighting Initiative under section
3 307.

Page 61, line 14, strike “303(c)” and insert
“303(b)”.

Page 61, line 22, strike “and”.

Page 61, line 25, strike the period and insert “;
and”.

Page 61, after line 25, insert the following new sub-
paragraph:

4 (G) \$30,000,000 for carrying out the Next
5 Generation Lighting Initiative under section
6 307.

Page 62, line 8, strike “303(c)” and insert
“303(b)”.

Page 62, line 16, strike “and”.

Page 62, line 19, strike the period and insert “;
and”.

Page 62, after line 19, insert the following new sub-
paragraph:

1 (G) \$50,000,000 for carrying out the Next
2 Generation Lighting Initiative under section
3 307.

Page 63, line 2, strike “303(c)” and insert
“303(b)”.

Page 63, line 7, strike “and”.

Page 63, line 10, strike the period and insert “;
and”.

Page 63, after line 10, insert the following new sub-
paragraph:

4 (F) \$50,000,000 for carrying out the Next
5 Generation Lighting Initiative under section
6 307.

Page 63, line 18, strike “303(c)” and insert
“303(b)”.

Page 63, line 23, strike “and”.

Page 64, line 3, strike the period and insert “; and”.

Page 64, after line 3, insert the following new sub-
paragraph:

7 (F) \$50,000,000 for carrying out the Next
8 Generation Lighting Initiative under section
9 307.

Page 64, line 4, redesignate section 309 as section 310.

Page 69, after line 17, insert the following new subsection:

1 (c) HIGH VOLTAGE TRANSMISSION LINES.—As part
2 of the program described in subsection (a), the Secretary
3 shall award a grant to a university research program to
4 design and test, in consultation with the Tennessee Valley
5 Authority, state-of-the-art optimization techniques for
6 power flow through existing high voltage transmission
7 lines.

Page 69, line 22, strike “\$210,000,000” and insert “\$220,000,000”.

Page 69, line 23, strike “\$230,000,000” and insert “\$240,000,000”.

Page 69, line 24, strike “\$250,000,000” and insert “\$250,000,000”.

Page 69, line 25, strike “\$270,000,000” and insert “\$265,000,000”.

Page 70, line 1, strike “\$290,000,000” and insert “\$275,000,000”.

Page 70, line 10, strike “\$120,000,000” and insert “\$130,000,000, of which \$2,000,000 shall be for the program under section 322(c)”.

Page 70, line 11, strike “\$130,000,000” and insert “\$140,000,000”.

Page 70, line 12, strike “\$155,000,000” and insert “\$150,000,000”.

Page 70, line 13, strike “\$165,000,000” and insert “\$160,000,000”.

Page 70, line 14, strike “\$175,000,000” and insert “\$165,000,000”.

Page 85, after line 17, insert the following new subsection:

- 1 (c) RENEWABLE ENERGY IN PUBLIC BUILDINGS.—
- 2 (1) DEMONSTRATION AND TECHNOLOGY TRANS-
- 3 FER PROGRAM.—The Secretary shall establish a pro-
- 4 gram for the demonstration of innovative tech-
- 5 nologies for solar and other renewable energy
- 6 sources in buildings owned or operated by a State or
- 7 local government, and for the dissemination of infor-
- 8 mation resulting from such demonstration to inter-
- 9 ested parties.

1 (2) LIMIT ON FEDERAL FUNDING.—The Sec-
2 retary shall provide under this subsection no more
3 than 40 percent of the incremental costs of the solar
4 or other renewable energy source project funded.

5 (3) REQUIREMENT.—As part of the application
6 for awards under this subsection, the Secretary shall
7 require all applicants—

8 (A) to demonstrate a continuing commit-
9 ment to the use of solar and other renewable
10 energy sources in buildings they own or operate;
11 and

12 (B) to state how they expect any award to
13 further their transition to the significant use of
14 renewable energy.

Page 111, after line 20, insert the following new sec-
tion:

15 **SEC. 606. CARBON DIOXIDE CAPTURE RESEARCH AND DE-**
16 **VELOPMENT.**

17 (a) PROGRAM.—The Secretary of Energy shall sup-
18 port a 10-year program of research and development
19 aimed at developing carbon dioxide capture technologies
20 for pulverized coal combustion units. The program shall
21 focus on—

22 (1) developing add-on carbon dioxide capture
23 technologies, such as adsorption and absorption

1 techniques and chemical processes, to remove carbon
2 dioxide from flue gas, producing concentrated
3 streams of carbon dioxide potentially amenable to se-
4 questration;

5 (2) combustion technologies that would directly
6 produce concentrated streams of carbon dioxide po-
7 tentially amenable to sequestration; and

8 (3) increasing the efficiency of the overall com-
9 bustion system in order to reduce the amount of car-
10 bon dioxide emissions released from the system per
11 megawatt generated.

12 (b) CARBON SEQUESTRATION.—In conjunction with
13 the program under subsection (a), the Secretary shall con-
14 tinue pursuing a robust carbon sequestration program
15 with the private sector, through regional carbon sequestra-
16 tion partnerships.

Page 111, line 21, redesignate section 606 as section
607.

Page 111, line 22, insert “(a) IN GENERAL.—” be-
fore “The following sums”.

Page 112, after line 3, insert the following new sub-
section:

1 (b) ALLOCATION.—From amounts authorized under
2 subsection (a), there are authorized to be appropriated for
3 carrying out the program under section 606—

4 (1) \$20,000,000 for fiscal year 2006;

5 (2) \$25,000,000 for fiscal year 2007;

6 (3) \$30,000,000 for fiscal year 2008;

7 (4) \$35,000,000 for fiscal year 2009; and

8 (5) \$40,000,000 for fiscal year 2010.

Amend the table of contents accordingly.